

The Texas Natural Resource Conservation Commission (commission) proposes amendments to §§309.1-309.4 and §§309.10-309.14, concerning effluent quality limitations for treated domestic sewage, and minimum standards for the location of domestic wastewater treatment facilities.

The proposed changes amend and update requirements relating to effluent limitations and facility location standards. The proposed changes will ease the administrative burden on the commission as well as provide added flexibility to those regulated by the rules by clarifying allowances for case-by-case reviews of modifications, allowing the use of smaller disinfection basins under certain conditions, and simplifying the methods used to meet the buffer zone requirements for the siting of wastewater treatment facilities to abate nuisance conditions. The proposed changes to the distance requirements from water wells and other sources of drinking water conform with other agency rules contained in Chapter 290 of this title (relating to Water Hygiene).

The purpose of the amendments is to also update the rules to meet current commission permitting practices and make corrections to domestic effluent limitations. Additionally, the amendments are intended to clarify the location requirements for wastewater treatment plants, including buffer zone requirements to abate nuisance conditions. The amendments will also update the rules to meet technology advancements and current engineering industry practices. The amendments are also intended to allow for performance based compliance. The amendments should reduce the need for the number of variances requested from permittees since modifications that in the past initiated requests for variances will now be more clearly defined in the rule.

The existing language in Subchapter A establishes the minimum effluent sets that must be used in permitting. Often, “natural” systems such as aerated lagoons, stabilization ponds, facultative ponds or constructed wetlands cannot meet the pH or total suspended solids criteria because of their operational nature. The proposed changes to §309.1 and §309.2, relating to Effluent Sets, allow the agency to consider flexible, alternative criteria when evaluating certain existing, natural systems that cannot meet pH or total suspended solids criteria. Several existing facilities, obtaining approvals through variances, use a chlorination system that does not meet the sizing criteria set out in the existing rule. The proposed changes to §309.3 would provide these facilities with an alternative, performance-based criteria to ensure disinfection of the wastewater effluent necessary to meet applicable water quality standards. In addition, a rule revision in 1990 inadvertently lowered the effluent criteria for wastewater irrigated on publicly-accessible land, causing confusion between the regulated public and commission regional inspectors. The proposed changes to §309.4 correct the requirements for disposal of treated effluent by irrigation at publicly accessible sites.

Subchapter B sets the siting criteria for wastewater treatment plants. Revisions to §309.12 are needed to simplify the requirements for compliance with the agency’s ground water protection efforts. Nearly 40% of all amendments submitted for domestic wastewater treatment facilities are the result of existing requirements for the buffer zones. The proposed changes to §309.13, Unsuitable Site Characteristics, clarify the prohibition of using wetlands for wastewater treatment, correlate the distance requirements from water wells and other sources of drinking water with other agency rules, and allow the use of public easements to meet the buffer zone requirements for wastewater treatment facilities without requiring an amendment to a permit. Finally, this rule change will correct typographical errors, clarify

the effective date of the location standards, and add definitions to clarify the meaning of certain terms used in the rule.

EXPLANATION OF PROPOSED RULE

Proposed changes to §309.1, relating to Scope and Applicability, clarify that the rule is applicable to stabilization ponds and other natural systems such as aerated lagoons followed by stabilization ponds, facultative ponds, stabilization ponds, and constructed wetlands.

Proposed changes to §309.2, relating to Rationale for Effluent Sets, allow for and clarify case-by-case reviews of modifications made to certain existing natural systems which cannot meet pH or total suspended solids criteria.

Proposed changes to §309.3, relating to Application of Effluent Sets, allow for the use of smaller disinfection basins for certain existing facilities and updates the nomenclature to that currently used by the agency.

Proposed changes to §309.4, relating to Effluent Limitations for Domestic Wastewater Treatment Plants, clarify the requirements for disposal of treated effluent by irrigation at publicly accessible sites.

Proposed changes to §309.10, relating to Purpose, Scope and Applicability, clarify the effective date of the location standards as previously adopted.

Proposed changes to §309.11, relating to Definitions, add definitions to clarify the meaning of certain terms used in the rule.

Proposed changes to §309.12, Site Selection to Protect Groundwater or Surface Water, simplify the use of the term “Active geologic processes.”

Proposed changes to §309.13, Unsuitable Site Characteristics, clarify the prohibition of using wetlands for wastewater treatment, correlate the distance requirements from water wells and other sources of drinking water with other agency rules, and allow the use of public easements to meet the buffer zone requirements for wastewater treatment facilities without requiring an amendment to a permit.

Proposed changes to §309.14, Prohibition of Permit Issuance, clarify the subsection’s prohibition of permit issuance for a facility not in compliance with §309.13.

FISCAL NOTE

Stephen Minick, Strategic Planning and Appropriations Division, has determined that for the first five years these sections as proposed are in effect, there will be fiscal implications as a result of enforcement and administration of the sections. There are no significant implications anticipated for state government. Local governments affected by the provisions could realize potential cost savings as a result of adoption of the proposed changes. The cost savings for local governments will result from the avoidance of enforcement actions due to reduced nuisance complaints that are anticipated to result from the proposed buffer zone requirements.

PUBLIC BENEFIT

Mr. Minick has also determined that for the first five years these sections as proposed are in effect the public benefit anticipated as a result of enforcement of and compliance with these sections will be the clarification of existing requirements relating to effluent limitations and location standards for wastewater facilities, the reduction of monitoring requirements for certain types of wastewater facilities, and more cost effective regulation of wastewater discharges. There are no economic costs anticipated for any person, including any small business, required to comply with the sections as proposed.

REGULATORY IMPACT ANALYSIS

The Commission has reviewed the proposed rulemaking in light of the regulatory analysis requirement of Texas Government Code §2001.0225 and has determined that the rulemaking is not subject to §2001.0225 because it does not meet the definition of a “major environmental rule” as defined in the act, and it does not meet any of the four applicability requirements listed in §2001.0225(a).

TAKINGS IMPACT ASSESSMENT

The commission has prepared a Takings Impact Assessment for these rules pursuant to Texas Government Code Annotated, §2007.043. The following is a summary of that Assessment. The specific purpose of the proposed rule is to ease the burden on the commission and those regulated by rule in establishing effluent limits and buffer zone requirements. Promulgation and enforcement of these proposed amendments will not affect private real property which is the subject of the rules.

PUBLIC HEARING

A public hearing on the proposal will be held January 12, 1997 at 10:00 a.m. in Room 2210 of the commission Building F, located at 12100 Park 35 Circle, Austin. The hearing is structured to receive oral or written comments by interested persons. Individuals may present oral statements, when called upon, in the order of registration. Open discussion within the audience will not occur during the hearing; however, a commission staff member will be available to discuss the proposal 30 minutes prior to the hearing and will answer questions before and after the hearing.

SUBMITTAL OF COMMENTS

Written comments on the proposal should refer to Rule Log No. 96107-309-WT and may be submitted to Lutrecia Oshoko, Texas Natural Resource Conservation Commission, Office of Policy and Regulatory Development, MC 205, P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-4640.

Comments may be faxed to (512) 239-5687, but must be followed up with the submission and receipt of the written comments within three working days of when they were faxed. Written comments must be received by 5:00 p.m., January 26, 1998. For further information concerning this proposal, please contact Randall B. Wilburn, Texas Natural Resource Conservation Commission, Water Quality Division, (512) 239-5768.

COASTAL MANAGEMENT PLAN

The executive director has reviewed the proposed rulemaking and found that the rule is neither identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11, relating to Actions and Rules Subject to the Coastal Management Program (CMP), nor will affect any action/authorization

identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11. Therefore, the proposed rule is not subject to the CMP.

STATUTORY AUTHORITY

These amendments are proposed under the Texas Water Code, §5.102, which provides the commission with the authority to carry out duties and general powers of the commission under its jurisdictional authority as provided by Texas Water Code §5.103. These amendments are also proposed under the Texas Water Quality Control Act which gives the commission the authority to adopt rules for the approval of disposal system plans under §26.034 of the Texas Water Code as well as the authority to set standards to prevent the discharge of waste that is injurious to the public health under §26.041 of the Texas Water Code.

There are no other codes or statutes that will be affected by this proposal.

SUBCHAPTER A : EFFLUENT LIMITATIONS

§§309.1 - 309.4

§309.1. Scope and Applicability.

(a) The purpose of these sections is to promulgate a set of effluent quality limitations for treated domestic sewage which will be required of permittees as appropriate to maintain water quality in accordance with the commission's surface water quality standards. Any incorporation of federal regulations into this chapter shall apply only to disposal of domestic sewage.

(b) Secondary treatment, with exceptions applicable to certain stabilization [oxidation] pond systems and other natural systems, is defined as a minimum reduction of pollutants to meet the following quality:

Figure 1: 30 TAC §309.1(b)

Biochemical Oxygen Demand (BOD ₅), 5-Day (milligram per liter, mg/l)	
30-Day Average	20
7-Day Average	30
Daily Maximum	45
Single Grab	65
Total Suspended Solids (TSS) (mg/l)	

30-Day Average	20
7-Day Average	30
Daily Maximum	45
Single Grab	65
Dissolved Oxygen (DO) (mg/l)	
Single Grab (minimum)	<u>2.0</u>
pH (Standard Units)	
Within limits of 6.0-9.0	

(c) Effective April 1988, all permits containing an ammonia-nitrogen effluent limit are hereby modified to change BOD₅ to carbonaceous biochemical oxygen demand (CBOD₅).

(d) Effective January 1, 1988, any permit containing a BOD₅ effluent limitation may be monitored and reported as CBOD₅ as long as nitrogen is monitored and reported as ammonia-nitrogen at the same sampling frequency. If the permit authorizes a discharge to land or an evaporation pond only, ammonia-nitrogen monitoring and reporting are not required to change to CBOD₅.

(e) The State of Texas has established a state water quality management program and a continuing planning process which sets forth the strategy and procedures for accomplishing the management program's objectives. Essential elements of the program include updates of basin plans, total maximum daily loads, and wasteload evaluations by basin segments. In order to achieve compliance with water quality standards within certain segments, more stringent effluent quality limitations other than basic secondary treatment may be required to protect water quality.

§309.2. Rationale for Effluent Sets.

(a) The effluent sets in §309.4 of this title (relating to Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants) are intended to represent standard levels of treatment normally required for domestic wastewater treatment plants.

(b) Modifications to the uniform sets of effluent criteria listed in §309.4 of this title [(relating to Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants)] may be considered by the commission when effluent limits more stringent than secondary treatment are required in order to maintain desired water quality levels.

(c) On a case-by-case basis, modifications to the uniform effluent criteria listed in §309.4 of this title may be considered by the commission for certain existing, natural systems which cannot consistently meet pH or total suspended solids criteria due to the inherent variability of a particular system. Modifications to the criteria may be allowed for a natural system designed for treatment or polishing with a discharge directly into surface waters. Natural systems include, but are not necessarily limited to, aerated lagoons followed by stabilization ponds, facultative ponds, stabilization ponds, and constructed wetlands. For the purpose of this chapter, playa lakes are not considered natural systems. The commission will consider the following factors in approving a modification to the criteria:

(1) Any modification shall not allow a discharge which would cause a violation of the commission's surface water quality standards or any applicable total maximum daily loads (TMDLs) or wasteload evaluation.

(2) A proposal for a modification must be supported by an engineering report, prepared and sealed by a qualified professional engineer representing the permit applicant, which justifies the request for modification with specific information relating to the proposed design and that design's inherent limitations. For considering a request for modification of an existing system that cannot achieve permitted pH or TSS limitations, the engineering report must also document past efforts of design modification, operation, and maintenance, and include data showing for the past three years, influent and effluent hydraulic and organic loadings and the resultant effluent quality achieved.

(3) The commission may set narrative effluent limitations and effluent monitoring requirements as an alternative to a specific numerical effluent limitation when a specific numeric effluent limitation cannot be met because of, but not limited to, seasonal or operational factors. These narrative requirements shall ensure that necessary operational and maintenance actions are consistently carried out by the permittee to meet applicable water quality standards.. The commission may request resumption of the original numerical limitations at the expiration of the permit based on a review of the discharge effluent data.

(4) The commission may suspend setting a specific numerical effluent limitation for a temporary period of time not to exceed the remainder of the permit term, pending a review of the

actual performance of a natural system's design as long as the facility meets paragraph (1) of this subsection. During any temporary suspension, the permittee must document that the system is operated and maintained for optimal performance in accordance with an operation and maintenance manual prepared in accordance with Chapter 317 of this title (relating to Design Criteria for Sewerage Systems) and is meeting water quality standards. After review of performance data and related information submitted by the permittee in a permit application, at time of permit renewal or amendment, or when submitted at the request of the executive director, the commission may set specific numerical effluent limitations consistent with the criteria of this subchapter and the performance documented for the particular system.

§309.3. Application of Effluent Sets.

(a) Discharges into effluent limited segments.

(1) All discharges into effluent limited segments shall, at a minimum, achieve secondary treatment. An effluent limited segment is any segment which is presently meeting or will meet applicable water quality criteria following incorporation of secondary treatment for domestic sewage treatment plants and/or best practicable treatment for industries.

(2) New or increased discharges into effluent limited segments shall achieve that level of treatment deemed necessary by the commission, based on the assimilative capacity and uses of the receiving stream.

(b) Discharges into water quality limited segments.

(1) All discharges into water quality limited segments for which evaluations have been developed shall, at a minimum, achieve the treatment level specified in the recommendations of the evaluation for that discharge. [In the event that analyses indicate that different treatment levels are required due to changed conditions or other factors, the commission may consider alternate treatment levels on a case-by-case basis.] A water quality limited segment is a surface water segment classified by the commission as water quality limited where conventional treatment of waste discharged to the segment is not stringent enough for the segment to meet applicable water quality standards; monitoring data have shown significant violations of water quality standards; advanced waste treatment for point sources is required to protect existing exceptional water quality; or the segment is a domestic water supply reservoir used to supply drinking water.

(2) Discharges into water quality limited segments for which wasteload evaluations or total maximum daily loads have not been developed [performed] shall, at a minimum, achieve secondary treatment as provided by §309.1 of this title (relating to Scope and Applicability).

(c) Discharges into certain reservoirs. Any discharge made within five miles upstream of a reservoir or lake which is subject to onsite/private sewage facility regulation adopted pursuant to Chapter 26 of the Texas Water Code or Article 4477-7e of the Texas Revised Civil Statutes [Texas Solid Waste Disposal Act, Article 4477-7e], or which may be used as a source for public drinking water supply shall achieve, at a minimum, Effluent Set 2 in §309.4 of this title (relating to Table 1,

Effluent Limitations for Domestic Wastewater Treatment Plants). Five miles shall be measured in stream miles from the normal conservation pool elevation. The commission may grant exceptions to this requirement where it can be demonstrated that the exception would not adversely impact water quality.

(d) Discharges from stabilization [oxidation] ponds. Effluent Set 3 shall apply to stabilization [oxidation] pond facilities in which stabilization [oxidation] ponds are the primary process used for secondary treatment and in which the ponds have been designed and constructed in accordance with applicable design criteria. Effluent Set 3 is considered equivalent to secondary treatment for stabilization [oxidation] pond systems.

(e) Discharge to an evaporation pond. Effluent discharged to evaporation ponds must receive, at a minimum, primary treatment, be within the pH limits of 6.0-9.0 standard units and have a quality of 100 mg/l BOD₅ or less on a grab sample. For the purpose of this subsection, primary treatment means solids separation which is typically accomplished by primary clarifiers, Imhoff tanks, facultative lagoons, septic tanks, and other such units.

(f) Land disposal of treated effluent. The commission may authorize land disposal of treated effluent when the applicant demonstrates that the quality of ground [groundwaters] or surface waters in the state will not be adversely affected. Each project must be consistent with laws relating to water rights. The primary purpose of such a project must be to dispose of treated effluent and/or to further enhance the quality of effluent prior to discharge.

(1) When irrigation systems ultimately dispose of effluent on land to which the public has access, Effluent Set 6, at a minimum, shall apply. The pH shall be within the limits of 6.0-9.0 standard units unless a specific variance is provided in the permit based upon site-specific conditions. When lands to which the public does not have access are to be used for ultimate disposal of effluent, the effluent must, at a minimum, receive primary treatment. Effluent Set 7 shall apply and the pH shall be within the limits of 6.0-9.0 standard units unless a specific variance is provided in the permit based upon site-specific conditions. For irrigation systems, primary treatment is the same as described in subsection (e) of this section. Effluent may be used for irrigation only when consistent with Subchapters B and C of this chapter (relating to Location Standards and Land Disposal of Sewage Effluent).

(2) When overland flow systems are utilized for effluent treatment, the public shall not have access to the treatment area. Primary treated effluent meeting Effluent Set 8, within the pH limits of 6.0-9.0 standard units may be used consistent with environmental safeguards and protection of ground and surface waters. For overland flow systems, primary treatment is the same as described in subsection (e) of this section. At a minimum, Effluent Set 1 shall apply to discharges from overland flow facilities except where more stringent treatment levels are required to meet water quality standards.

(3) When evapotranspiration beds, low pressure dosing, drip irrigation, or similar soil absorption [and subsurface drain fields are utilized for land disposal] systems are utilized for on-site land disposal, the effluent shall, at a minimum, receive primary treatment and meet Effluent Set 9.

Use of these on-site systems [evapotranspiration beds and subsurface drain fields] shall be consistent with environmental safeguards and the protection of ground and surface waters. Primary [For evapotranspiration beds and subsurface drain fields, primary] treatment is the same as described in subsection (e) of this section.

(g) Disinfection.

(1) Except as provided in this subsection, disinfection in a manner conducive to the protection of both public health and aquatic life shall be achieved on all domestic wastewater [wastewaters] which discharges [discharge] into waters in the state. Any appropriate process may be considered and approved on a case-by-case basis.

(2) Where chlorination is utilized, any combination of detention time and chlorine residual where the product of chlorine (Cl_2 mg/l) X Time (T minutes) equals or exceeds 20 is satisfactory provided that the minimum detention time is at least 20 minutes and the minimum residual is at least 0.5 mg/l. The maximum chlorine residual in any discharge shall in no event be greater than four mg/l per grab sample, or that necessary to protect aquatic life. Where an existing system, constructed prior to October 8, 1990, has a detention time of less than 20 minutes at peak flow, the waste discharge permit will be amended at renewal by the commission to require limits for both chlorine residual and fecal coliform.

(3) On a case-by-case basis, the commission will allow chlorination or disinfection alternatives to the specific criteria of time and detention described in paragraph (2) of this subsection that achieve equivalent water quality protection. These alternatives will be considered and their performance standards determined based upon supporting data submitted in an engineering report, prepared and sealed by a registered, professional engineer. The report should include supporting data, performance data, or field tracer studies, as appropriate. The commission will establish effluent limitations as necessary to verify disinfection is adequate, including chlorine residual testing, other chemical testing, and/or fecal coliform testing.

[(3) Except as provided herein, disinfection of domestic wastewaters which are discharged by means of land disposal or evaporation pond shall be reviewed on a case-by-case basis to determine the need for disinfection. All effluent discharged to land to which the public has access must be disinfected and if the effluent is to be transferred to a holding pond or tank, the effluent shall be rechlorinated to a trace chlorine residual at the point of irrigation application.]

(4) Except as provided herein, disinfection of domestic wastewater which is discharged by means of land disposal or evaporation pond shall be reviewed on a case-by-case basis to determine the need for disinfection. All effluent discharged to land to which the public has access must be disinfected and if the effluent is to be transferred to a holding pond or tank, the effluent shall be rechlorinated to a trace chlorine residual at the point of irrigation application.

(5) [4] Unless otherwise specified in a permit, chemical disinfection is not required for stabilization [oxidation] ponds when the total retention time in the free-water-surface ponds [wastewater treatment system] (based on design flow) is at least 21 days.

(h) More stringent requirements. The commission may impose more stringent requirements in permits than those specified in subsections (a) - (g) of this section, on a case-by-case basis, where appropriate to maintain desired water quality levels.

§309.4. Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants.

This table contains the sets of effluent criteria for waste discharge permits.

Figure 1: 30 TAC §309.4

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Table 1

Effluent Limitations for Domestic Treatment Plants

Set	Direct Discharge	30-Day Average		7-Day Average		Daily Maximum		Single Grab		DO MIN
		BOD ₅	TSS	BOD ₅	TSS	BOD ₅	TSS	BOD ₅	TSS	
1	Secondary treatment	20	20	30	30	45	45	65	65	<u>2.0</u>
2	Enhanced secondary treatment	10	15	15	25	25	40	35	60	<u>4.0</u>
3	<u>Stabilization</u> [Oxidation] ponds	30	90	45	--	70	--	100	--	<u>4.0</u>
<u>Land Treatment/Disposal</u>										
6	Irrigation (public exposure)	<u>20</u>	<u>20</u>	<u>30</u>	<u>30</u>	<u>45</u>	<u>45</u>	65	<u>65</u>	--
	Using <u>Stabilization ponds</u> [oxidation pond]	<u>30</u>	<u>90</u>	<u>45</u>	--	<u>70</u>	--	100	--	--
7	Irrigation (no public exposure)	--	--	--	--	--	--	100	--	--
8	Overland flow (applied <u>effluent</u> [effluent])	--	--	--	--	--	--	100	--	--
9	Evapotranspiration beds, <u>low pressure dosing</u> , and <u>drip irrigation</u> [subsurface drain fields]	--	--	--	--	--	--	100	--	--

		30-Day Average			7-Day Average			Daily Maximum			Single Grab			
		CBOD ₅	TSS	NH ₃ -N	CBOD ₅	TSS	NH ₃ -N	CBOD ₅	TSS	NH ₃ -N	CBOD ₅	TSS	NH ₃ -N	DO
		MIN												
Enhanced														
2N	Secondary with Nitrification	10	15	3	15	25	6	25	40	10	35	60	15	<u>4.0</u>
2N1	Secondary with Nitrification	10	15	2	15	25	5	25	40	10	35	60	15	<u>4.0</u>

SUBCHAPTER B: LOCATION STANDARDS

§§309.10-309.14

These amendments are proposed under the Texas Water Code, §5.102, which provides the commission with general powers to carry out duties under the Texas Water Code and §26.034, which provides the commission with the authority to adopt rules for the approval of disposal system plans.

There are no other codes or statutes that will be affected by this proposal.

§309.10. Purpose, Scope and Applicability.

(a) This chapter establishes minimum standards for the location of domestic wastewater treatment facilities. These standards are to be applied in the evaluation of an application for a permit to treat and dispose of domestic wastewater [wastewater and sludges] and for obtaining approval of construction plans and specifications. This chapter applies to domestic wastewater permit applications and construction plans and specifications filed on or after October 8, 1990 [the effective date of the new rules], for new facilities and existing units which undergo substantial change for the continued purpose of domestic wastewater treatment [and/or sludge disposal].

(b) The purpose of this chapter is to condition issuance of a permit and/or approval of construction plans and specifications for new domestic wastewater treatment facilities or the substantial change of an existing unit on selection of a site that minimizes possible contamination of ground and

surface waters; to define the characteristics that make an area unsuitable or inappropriate for a wastewater treatment facility; to minimize the possibility of exposing the public to nuisance conditions; and to prohibit issuance of a permit for a facility to be located in an area determined to be unsuitable or inappropriate, unless the design, construction, and operational features of the facility will mitigate the unsuitable site characteristics.

§309.11. Definitions.

The following words and terms when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise:

Active geologic processes - Any natural process which alters the surface and/or subsurface of the earth, including, but not limited to, erosion (including shoreline erosion along the coast), submergence, subsidence, faulting, karst formation, flooding in alluvial flood wash zones, meandering river bank cutting, and earthquakes.

Aquifer - A geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs. Portions of formations, such as clay beds, which are not capable of yielding a significant amount of groundwater to wells or springs are not aquifers.

Erosion - The group of natural processes, including weathering, deterioration, detachment, dissolution, abrasion, corrosion, wearing away, and transportation, by which earthen or rock material is removed from any part of the earth's surface.

Existing facility - Any facility used for the storage, processing, or disposal of domestic wastewater [and/or sludges] and which has obtained approval of construction plans and specifications as of March 1, 1990.

New facility - Any domestic wastewater treatment facility which is not an existing facility.

Nuisance odor prevention - The reduction, treatment, and dispersal of potential odor conditions that interfere with another's use and enjoyment of property that are caused by or generated from a wastewater treatment plant unit, which conditions cannot be prevented by normal operation and maintenance procedures of the wastewater treatment unit.

One hundred-year flood plain -- Any land area which is subject to a 1.0% or greater chance of flooding in any given year from any source.

Substantial change in the function or use - an increase in the pollutant load or modification in the existing purpose of the unit.

[Wastewater treatment plant sludges, screenings, and grit or Sludges - Any solid, semi-solid, or liquid residue that contains materials organic or inorganic, removed during domestic wastewater treatment.]

Wastewater treatment plant unit - Any apparatus necessary for the purpose of providing treatment of wastewater (i.e., aeration basins, splitter boxes, bar screens, sludge drying beds, clarifiers, overland flow sites, treatment ponds or basins that contain wastewater, etc.). For purposes of compliance with the requirements of §309.13(e) of this title (relating to Unsuitable Site Characteristics), this definition does not include off-site bar screens, off-site lift stations, flow metering equipment, or post-aeration structures needed to meet permitted effluent minimum dissolved oxygen limitations.

Wetlands - Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, playa lakes, and similar areas.

§309.12. Site Selection to Protect Groundwater or Surface Water.

The commission may not issue a permit for a new facility or for the substantial change of an existing facility unless it finds that the proposed site, when evaluated in light of the proposed design,

construction or operational features, minimizes possible contamination of surface water and groundwater. In making this determination, the commission may consider the following factors:

(1) active geologic processes [such as flooding, erosion, subsidence, submergence and faulting];

(2) groundwater conditions such as groundwater flow rate, groundwater quality, length of flow path to points of discharge and aquifer recharge or discharge conditions;

(3) soil conditions such as stratigraphic profile and complexity, hydraulic conductivity of strata, and separation distance from the facility to the aquifer and points of discharge to surface water; and

(4) climatological conditions.

§309.13. Unsuitable Site Characteristics.

(a) A wastewater treatment plant unit may not be located in the 100-year flood plain unless the plant unit is protected from inundation and damage that may occur during that flood event.

(b) A wastewater treatment plant unit may not be located in wetlands[, except that wetlands may be used as a polishing unit for treated wastewater]. (This prohibition is not applicable to constructed wetlands.)

(c) A wastewater treatment plant unit may not be located closer than 500 feet from a public water well as provided by §290.41(c)(1)(A) of this title (relating to Ground Water Sources and Development) nor 250 feet from a private water well. The following separation distances apply to any facility used for the storage, processing, or disposal of domestic wastewater. Exceptions to these requirements will be considered at the request of a permit applicant on a case-by-case basis, and alternative provisions will be established in a permit if the alternative condition provides adequate protection to potable water sources and supplies:

_____ (1) A wastewater treatment plant unit, land where surface irrigation using wastewater effluent occurs, or soil absorption systems (including low pressure dosing systems, drip irrigation systems, and evapotranspiration beds) must be located a minimum horizontal distance of 150 feet from a private water well as provided by §290.41 (c)(1)(A) of this title;

_____ (2) A wastewater treatment plant unit, land where surface irrigation using wastewater effluent occurs, or soil absorption systems (including low pressure dosing systems, drip irrigation systems, and evapo-transpiration beds) must be located a minimum horizontal distance of 500 feet from an elevated or ground potable-water storage tank as provided by §290.43 (b)(1) of this title (relating to Location of Clear Wells, Standpipes, and Ground Storage and Elevated Tanks.);

(3) A wastewater treatment plant unit, land where surface irrigation using wastewater effluent occurs, or soil absorption systems (including low pressure dosing systems, drip irrigation systems, and evapo-transpiration beds) must be located a minimum horizontal distance of 500 feet from a public water well site as provided by §290.41(c)(1)(C) of this title, spring, or other similar sources of public drinking water;

(4) A wet well or pump station at a wastewater treatment facility must be located a minimum horizontal distance of 300 feet from a public water well site, spring, or other similar sources of public drinking water as provided by §290.41(c)(1)(B) of this title; and

(5) A wastewater treatment plant unit, soil absorption systems (including low pressure dosing systems, drip irrigation systems, and evapo-transpiration beds), or land where surface irrigation using wastewater effluent occurs must be located a minimum horizontal distance of 500 feet from a surface water treatment plant as provided by §290.41(e)(3)(A) of this title.

(d) A wastewater treatment facility surface impoundment may not be located in areas overlying the recharge zones of major or minor aquifers, as defined by the Texas Water Development Board, unless the aquifer is separated from the base of the containment structure by a minimum of three feet of material with a hydraulic conductivity toward the aquifer not greater than 10^{-7} cm/sec or a thicker interval of more permeable material which provides equivalent or greater retardation of pollutant migration. A synthetic membrane liner may be substituted with a minimum of 30 mils thickness and an underground leak detection system with appropriate sampling points.

(e) One of the following alternatives must be met as a compliance requirement to abate and control a nuisance of odor prior to construction of a new wastewater treatment plant unit, or substantial change in the function or use of an existing wastewater treatment unit:

(1) Lagoons with zones of anaerobic activity (e.g., facultative lagoons, un-aerated equalization basins, etc.) may not be located closer than 500 feet to the nearest property line. All other wastewater treatment plant units may not be located closer than 150 feet to the nearest property line. Land used to treat primary effluent is considered a plant unit. Buffer zones for land used to dispose of treated effluent by irrigation shall be evaluated on a case-by-case basis. The permittee must hold legal title or have other sufficient property interest to a contiguous tract of land necessary to meet the distance requirements specified in this paragraph during the time effluent is disposed by irrigation;

(2) The applicant must submit a nuisance odor prevention request for approval by the executive director. A request for nuisance odor prevention must be in the form of an engineering report, prepared and sealed by a licensed professional engineer in support of the request. At a minimum, the engineering report shall address existing climatological conditions such as wind velocity and atmospheric stability, surrounding land use which exists or which is anticipated in the future, wastewater characteristics in affected units pertaining to the area of the buffer zone, potential odor generating units, and proposed solutions to prevent nuisance conditions at the edge of the buffer zone and beyond. Proposed solutions shall be supported by actual test data or appropriate calculations. The request shall be submitted, prior to construction, either with a permit application and subject to review

during the permitting process or submitted for executive director approval after the permitting process is completed; or,

(3) The permittee must submit sufficient evidence of legal restrictions prohibiting residential structures within the part of the buffer zone not owned by the applicant. Sufficient evidence of legal restriction may, among others, take the form of a suitable restrictive easement, right-of-way, covenant, deed restriction, deed recorded, or a private agreement provided as a certified copy of the original document. The request shall be submitted, prior to construction, either with a permit application and subject to review during the permitting process or submitted for executive director approval after the permitting process is completed.

(f) For a facility for which a permit application, other than a renewal application, is made after October 8, 1990, if the facility will not meet the buffer zone requirement by one of the alternatives described in subsection (e) of this section, the applicant shall include in the application for the discharge permit a request for a variance. A variance will be considered on a case-by-case basis and, if granted by the commission, shall be included as a condition in the permit. This variance may be granted by the commission, consistent with the policies set out in Texas Water Code, §26.003.

(g) Any approved alternative for achieving the requirements of this subsection must remain in effect as long as the wastewater treatment plant is permitted by the commission. To comply with this requirement, the permittee must carry out the nuisance odor prevention plan at all times, shall ensure

sufficient property ownership or interest and shall maintain easements prohibiting residential structures, as appropriate.

(h) For a permitted facility undergoing renewal of an existing permit with plans and specifications approved prior to March 1, 1990, for which no design change is requested, the facility will not be required to comply with the requirements of this subsection.

(i) Facilities for which plans and specifications have been approved prior to March 1, 1990, are not required to resubmit revised plans and specifications to meet changed requirements in this section in obtaining renewal of an existing permit.

[(d) A wastewater treatment facility surface impoundment may not be located in areas overlying regional aquifers unless the regional aquifer is separated from the base of the containment structure by a minimum of 3 feet of material with a hydraulic conductivity toward the aquifer not greater than 10^{-7} cm/sec or a thicker interval of more permeable material which provides equivalent or greater retardation of pollutant migration. A synthetic membrane liner may be substituted with a minimum of 30 mils thickness and an underground leak detection system with appropriate sampling points.]

[(e) Lagoons with zones of anaerobic activity (e.g. facultative lagoons) may not be located closer than 500 feet to the nearest property line. All other wastewater treatment plant units, excluding lift stations, may not be located closer than 150 feet to the nearest property line. Land used to treat

primary effluent is considered a plant unit. Buffer zones for land used to dispose of treated effluent by irrigation shall be evaluated on a case-by-case basis. If the buffer zone requirement cannot be met by legal ownership on an undivided tract of land, one of the following alternatives shall be required:]

[(1) For a facility for which a permit application is made after the effective date of this section, if the facility will not meet the buffer zone requirement, the applicant shall include in the application for the discharge permit a request for a variance. A variance granted by the commission under this subsection shall be included as a condition in the new permit. Variances may be granted by the commission under the following circumstances:]

[(A) acceptable means of nuisance prevention is provided, such as enclosing the treatment plant in a structure designed and suitable for noise and odor abatement;]

[(B) the applicant possesses a restrictive easement on the part of the property in the buffer zone not owned by the applicant which prohibits a residential structure within the buffer zone; or]

[(C) other reasons that justice may require, consistent with the policies set out in the Texas Water Code, §26.003.]

[(2) For a facility for which a permit amendment application is made which involves a substantial design change to a wastewater treatment plant unit, if the facility will not meet the buffer

zone requirement, the applicant shall include in the application for amendment a request for variance.

Variances may be granted by the commission under the circumstances described in paragraph (1) of this subsection.]

[(3) For a permitted facility for which plans and specifications approval only is sought, if the facility will not meet the buffer zone requirement, the applicant shall apply to the executive director for a variance. Any variance granted by the executive director shall be stated in writing. If a variance request is denied by the executive director, a permittee may appeal, by application for a major permit amendment, to the commission, which may hear the appeal or remand the matter to the Office of Hearings Examiners for a hearing conducted in accordance with the Rules of the commission.

Variances may be granted by the executive director under the following circumstances:]

[(A) acceptable means of nuisance prevention is provided, such as enclosing the treatment plant in a structure designed and suitable for noise and odor abatement;]

[(B) the applicant possesses a restrictive easement on the part of the property in the buffer zone not owned by the applicant which prohibits a residential structure within the buffer zone; or]

[(C) no residential structure is located within the buffer zone at the time the request is filed.]

[(4) For a permitted facility with plans and specifications approved prior to March 1, 1990, for which no design change is requested, the facility shall not be required to comply with these buffer zone requirements.]

[(5) Facilities for which plans and specifications have been approved prior to March 1, 1990 are not required to resubmit revised plans and specifications to meet changed requirements in this section.]

[(f) Storage and/or disposal of sludges in the 100-year flood plain shall not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the flood plain, or result in washout of solid wastes.]

[(g) A sludge land treatment facility or landfill may not be located in wetlands.]

[(h) Buffer zones for the storage and/or disposal of sludges shall be evaluated on a case-by-case basis.]

[(i) A sludge landfill may not be located in areas overlying regional aquifers unless:]

[(1) It is an area where the average annual evaporation exceeds average annual rainfall by more than 40 inches and the depth to the regional aquifer is greater than 100 feet from the base of the containment structure; or]

[(2) The regional aquifer is separated from the base of the containment structure by a minimum of 3 feet with a hydraulic conductivity toward the aquifer not greater than 10^{-7} cm/sec or a thicker interval of more permeable material which provides equivalent or greater retardation to pollutant migration. A synthetic liner of equivalent permeability may be substituted with a minimum of 30 mils thickness and an underground leak detection system with appropriate sampling points.]

§309.14. Prohibition of Permit Issuance.

(a) The commission may not issue, amend, or renew a permit for a [new] wastewater treatment plant [or for the substantial change of an existing plant] if the facility [or expanding facility] does not meet the requirements of §309.13 of this title (relating to Unsuitable Site Characteristics).

(b) Nothing in this chapter shall be construed to require the commission to issue a permit, notwithstanding a finding that the proposed facility would satisfy the requirements of §309.12 of this title (relating to Site Selection to Protect Groundwater or Surface Water) and notwithstanding the absence of site characteristics which would disqualify the site from permitting pursuant to §309.13 of this title (relating to Unsuitable Site Characteristics).

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.